The Resurgence of Growth in the Late 1990s: Is Information Technology the Story?

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Introduction

- Earlier work found only a modest influence of information technology on economic growth through the early 1990s.

- This paper examines the more recent period with the same neoclassical growth-accounting framework in earlier work.

Major Empirical Findings

- The *use* of IT throughout the economy has made a large contribution to the acceleration of productivity since 1995.

- The *production* of computers and embedded semiconductors has also contributed importantly to this recent acceleration.

- Taken together, these two factors account for about two-thirds of the acceleration in labor productivity since 1995.

Measuring the Growth Contributions from the *use* and *production* of information technology

- To measure *use* of information technology, we decompose productivity growth into contributions from use of information technology capital (hardware, software, and communication equipment), use of other capital, changes in labor composition, and multifactor productivity.

- For the *production* side, we further decompose multifactor productivity growth to extract the component related to efficiency gains in the production of computers and embedded semiconductors.

- As much as possible, we use standard data from the Bureau of Labor Statistics and the the Bureau of Economic Analysis. Where necessary, we augment these data from other sources.

Decomposition of Productivity Growth

	1991-95	1996-99	Accel.
1. Growth rate of labor productivity[a]	1.53	2.57	1.04
2. Contributions from[b]:			
3. Capital deepening	.62	1.10	.48
4. Information technology	.51	.96	.45
5. Other capital	.11	.14	.03
6. Labor quality	.44	.31	-.13
7. Multifactor productivity	.48	1.16	.67
8. Product. of computers and related semic	.23	.49	.26
9. Other	.25	.67	.41

Note: Detail may not sum to totals due to rounding.
Source: Oliner and Sichel (2000).

[a]Percent per year.
[b]Percentage points per year.

CONCLUSION

- Both the *use* of information technology and the *production* of computers and embedded semiconductors have contributed importantly to the pickup in productivity growth in the second half of the 1990s.

- Of the roughly 1 percentage point acceleration in labor productivity growth, about two-thirds reflects use of IT capital or production of computers (and embedded semiconductors).

- There are upside and downside risks to these figures; but even a lower-bound estimate would imply a large role for information technology.

- Although the phrase "new economy" has many different definitions, one key ingredient is a sizable role for information technology.

For more information, see our paper at:

http://www.federalreserve.gov/pubs/feds/2000/index.html